DOCUMENT RESUME

ED 432 352 JC 990 510

TITLE	Higher Education in Tennessee: An Economic Analysis from a Student, Society, and State Perspective.
INSTITUTION	Tennessee State Board of Regents, Nashville.
PUB DATE	1998-03-00
NOTE	7p.
PUB TYPE	Numerical/Quantitative Data (110) -- Reports - Research (143)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Community Colleges; *Cost Effectiveness; Economic Impact; Economic Opportunities; *Economic Research; *Expenditures; Higher Education; Investment; *Outcomes of Education; *Student Costs
IDENTIFIERS	*Return on Investment; *Tennessee

ABSTRACT

This document presents an economic analysis of higher education in Tennessee from a student, societal, and state perspective. The cost-benefit ratios speak favorably for the economic value of higher education in Tennessee from the student's perspective. On average, a student may expect a return of $5.44 for each dollar invested; the return for an associate degree is $5.84. The cost-benefit ratios demonstrate the excellent value of higher education in Tennessee. On average, society may expect a return of $9.30 for each dollar invested, based on a Department of Commerce multiplier estimating the impact of income on the economy. A table shows the income that the state may expect (in sales tax revenue alone) over and above what a high school graduate would be expected to contribute. For example, state tax revenues (increase) for a two year associate degree, $8,444; for a Bachelor's degree, $18,096; and for an advanced degree, $31,054. It is clear from this information that the state achieves a significant return on its investment in higher education. The document concludes that an investment by the state in higher education institutions of the Tennessee Board of Regents system yields significant returns to the student, to the state, and to society as a whole. (JJL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 432 352

Higher Education in Tennessee: An Economic Analysis

from a Student, Society, and State Perspective

The Tennessee Board of Regents

March 1998

IC 499050

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

R. Rhoda

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

The Student's Perspective

The table below estimates the economic benefits and costs that a student may expect as a result of an investment in higher education at a Tennessee Board of Regents institution.

Higher Education Economic Analysis

Table 1
Estimated Benefits and Costs of Higher Education
of the Representative Tennessee Student
(Constant $)

	Two Year Associate	Bachelor's Degree	Advanced Degree	All Degrees
Income After Tax (Federal Income Tax)	$417,870	$563,722	$692,401	$533,877
Gains Over High School	$114,430	$252,547	$376,086	$224,590
Cost Lost Income After Tax while in School	$15,609	$33,930	$54,181	$30,859
Books and Fees	$3,985	$12,539	$18,108	$10,464
Total Student Cost	**$19,594**	**$46,469**	**$72,289**	**$41,323**
Cost-Benefit Ratios	5.84	5.43	5.20	5.44

The first row in the table above shows the income, after tax, that an individual may expect to earn. The second row shows the gain in income a college graduate may earn over that expected by a high school graduate.

The next section in the table shows the costs associated with higher levels of education expressed as 1) the loss of earnings while in school and 2) the cost of books and tuition required to earn the education.

At the bottom of the table, the cost-benefit ratios speak favorably for the economic value of higher education in Tennessee from a Board of Regents student's perspective. On the average a student may expect a return of $5.44 for each dollar invested. The table also shows that the more education one has the greater the gain over high school earnings.

Society's Perspective

The table below estimates the economic benefits and costs that society may expect as a result of an investment in higher education at a Tennessee Board of Regents institution.

Higher Education Economic Analysis

Table 2
Estimated Benefits and Costs to Society
For Tennessee's Higher Education Investment in a Student
(Constant $)

	Two Year Associate	Bachelor's Degree	Advanced Degree	All Degrees
Personal Income	$464,211	$626,358	$769,335	$593,198
Gains Over High School Direct $127,144		$280,607	$417,873	$249,544
Total Economic Benefit	$288,617	$636,978	$948,572	$566,465
Society's Cost Lost Income (in School)	$17,344	$37,700	$60,183	$34,285
Books and Fees	$3,985	$12,539	$18,108	$10,464
State Subsidy	$6,100	$18,897	$29,517	$16,170
Total Economic Cost	$27,429	$69,136	$107,808	$60,919
Cost-Benefit Ratios	10.52	9.21	8.80	9.30

In this presentation, the first row in the table shows the income, before tax, that society may expect from its investment in an individual's higher education. The second row shows the direct gain in income over high school, while the third row utilizes the Department of Commerce's regional multiplier (2.27) to estimate the overall impact on the economy.

The next section in the table shows the costs to society associated with higher levels of education expressed as;

1) the loss of earnings while in school

2) the cost of books and tuition required to earn the education and

3) the cost of the state's education subsidy.

At the bottom of the table, the cost-benefit ratios demonstrate the excellent value of higher education in Tennessee. On the average society may expect a return of $9.30 for each dollar invested. The table also shows that the more education one has the greater the gain over high school earnings.

The State's Perspective

The table below estimates the economic benefits and costs that the state may expect as a result of its investment in higher education for a student at a Tennessee Board of Regents institution.

Higher Education Economic Analysis

Table 3
Financial Benefits and Costs from the State
of Tennessee's Higher Education Investment in a Student

	Two Year Associate	Bachelor's Degree	Advanced Degree	All Degrees
State Tax Revenue (Increase)	$8,444	$18,096	$31,054	$16,856
State Subsidy (Cost)	$6,100	$18,897	$29,517	$16,170
Cost Benefit Ratios	1.38	0.96	1.05	1.04

The first row in the table above shows the income that the state may expect *(in sales tax revenue alone)* over and above what a high school graduate would be expected to contribute. Costs are shown on the second row in terms of the state's higher education subsidy.

It is clear from this presentation that the state achieves a return of its investment in higher education through an increase in the collection of sales taxes alone. Increased property taxes, Hall Income Tax collections, and other revenue sources not mentioned here could all be considered as profit to the state.

This analysis does not include an estimate of the savings the state achieves in terms of reduced likelihood of incarceration or lower participation rates for welfare or other social support programs to achieve this return, even though these returns most certainly exist in addition to those mentioned above.

Return on Investment

This section of the analysis looks at the real rates of return that both the individual and society can expect from an investment in higher education. The table below presents these rates for each of the levels of education presented in the prior tables.

Higher Education Economic Analysis

Table 4
Real Rates of Return on Investment in Higher Education
(Percent)

	Two Year Associate	Bachelor's Degree	Advanced Degree	All Degrees
Student	19.0%	15.0%	14.5%	15.0%
Society	16.0%	12.0%	12.0%	12.5%

Note: The yield for U.S. 10-year Securities and Corporate AAA bonds in 1996 were 6.44% and 7.37% respectively.

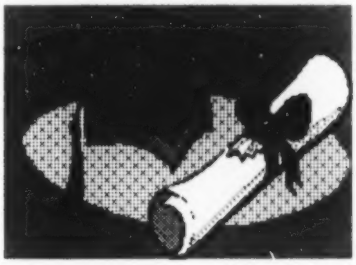
It should be emphasized that the rates presented in the table are the real rates of return and, as such, have had the effects of inflation removed. These are extremely impressive returns and would be held in high regard by any investor.

The table below shows the impact on the economy of the 1993-94 graduating class of 16,087 TBR graduates.

Higher Education Economic Analysis			
Table 5 Estimated Present Value of Life-time Income Attributable to Educational Attainment Over High School for all 1993/94 Graduates			
Type of Degree	**Gains Over High School**	**Number of Graduates**	**Total Value**
Associate Degree	$127,144	5,628	$715,566,432
Bachelors Degree	$280,607	7,806	$2,190,418,242
Advanced Degree	$417,873	2,653	$1,108,617,069
Total Direct Impact			$4,014,601,743
Overall Economic Impact			**$9,113,145,957**

Summary

- Investment by the state in higher education institutions of the Tennessee Board of Regents system yields significant returns to students, to the state, and to society as a whole.
- Estimates of the real rates of return for different educational attainment categories exceed the real yields of investment alternatives.
- Tennessee's investment in Board of Regent's institutions is highly productive.



BEST COPY AVAILABLE